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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,948	11/13/2003	Robert H. Wollenberg	T-6280	2902

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,948

Applicant(s)

WOLLENBERG ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/13/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 4, 6-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1 recites “reacting equivalent” in line 4 after the formula. The scope of the claim is confusing because it is not clear what is encompassed by this phrase. While it is noted that page 16, lines 18-19 of the present specification discloses that the “reacting equivalent” means any material equivalent to ethylene glycol and carbon dioxide such as carbonic acid half ester, the scope of the claim is still confusing because it is not clear what is meant by equivalent or when materials are considered to be equivalent to ethylene glycol and carbon dioxide.

Similar confusion arises in each of claims 13 and 22 that each also recite “reacting equivalent”.

(b) Claim 20 recites the limitation "the second promoter" in line 1. There is insufficient antecedent basis for this limitation in the claim. In the above phrase, it is suggested that “the” is changed to “a”.

(c) Claims 40 and 41 each recite the phrase “predominantly straight-chain alkyl group”. The scope of the claims is confusing because it is not clear what is meant by “predominantly” or what types of straight chain alkyl groups are considered to be “predominantly” straight chain.

(d) Claim 42 recites that the alkyl group of the alkylphenol is “attached predominantly” at the para position of the phenol ring. The scope of the claim is confusing because it is not clear what is meant by “attached predominantly”. Clarification is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 2-3, 5, and 49-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Vaughan (U.S. 4,218,328).

Vaughan discloses process for preparing overbased lubricating oil additives comprising forming a reaction mixture by combining Mannich condensation product of alkyl phenol wherein the alkyl group contains 8-128 carbon atoms, Group II metal oxide or hydroxide, ethylene glycol, i.e. promoter, and carbon dioxide. The Mannich condensation product of alkyl phenol is prepared by reacting alkyl phenol, aldehyde, and nitrogen-containing compound which clearly includes amine as presently claimed. It is further disclosed that the ratio of carbon dioxide to

calcium is 0.3-0.5 (col.2, line 53-col.3, line 5, col.3, line 18, col.4, lines 9-17, 30, 39-41, and 44-45, and col.5, lines 19-26). Given that the number of carbon atoms in the alkyl group of the alkyl phenol overlaps the number used in the present invention, it is clear that the alkyl group inherently contains a sufficient number of carbon atoms to render oil-soluble the resulting product. Further, given that Vaughan prepares overbased compound as presently claimed, it is clear that the combining is inherently carried out for a time and temperature sufficient to form such product.

Although there is no disclosure that the product of the process of Vaughan is a “detergent-dispersant antioxidant additive” as required in present claim 49, applicants attention is drawn to MPEP 2111.02 which states that “if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention’s limitations, then the preamble is not considered a limitation and is of no significance to claim construction”. Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the examiner’s position that the preamble does not state any distinct definition of any of the claimed invention’s limitations and further that the purpose or intended use, i.e. detergent-dispersant antioxidant additive, recited in the present claims does not result in a structural

difference between the presently claimed invention and the prior art product and further that the prior art structure which is additive identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

In light of the above, it is clear that Vaughan anticipates the present claims.

5. Claims 2-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nichols et al. (U.S. 5,173,203).

Nichols et al. disclose magnesium containing overbased product obtained by process comprising forming a reaction mixture by combining Mannich condensation product of alkyl phenol formed by reacting alkyl phenol, aldehyde, and amine wherein the alkyl group of the alkyl phenol contains at least 30 carbon atoms, magnesium oxide, ethylene glycol, water, and carbon dioxide. The reaction takes place at 110-170 °C for 5 minutes to 2 hours (col.2, lines 60-68, col.7, lines 57-63, col.8, lines 59-67, col.9, lines 9-18 and 56-63, col.11, lines 3 and 60-68, and col.13, lines 25-30). Given that the number of carbon atoms in the alkyl group of the alkyl phenol overlaps the number used in the present invention, it is clear that the alkyl group inherently contains a sufficient number of carbon atoms to render oil-soluble the resulting product. Further, given that Nichols et al. disclose reacting the above for time and temperature identical to that utilized in the present invention, it is clear that such reaction would inherently results in product comprising Group II metal carbonated, overbased Mannich condensation product of alkyl phenol as presently claimed.

In light of the above, it is clear that Nichols et al. anticipate the present claims.

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6. Claims 53-54 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Farnag et al. (U.S. 5,207,939).

Farnag et al. disclose Mannich reaction product of C₁-C₆₀ alkyl phenol, N-phenyl-p-phenylenediamine, and aldehyde (col.1, lines 53-59, col.2, line 20, and col.2, line 38-col.3, line 13).

In light of the above, it is clear that Farnag et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 55 and 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnag et al. (U.S. 5,207,939).

Farnag et al. disclose Mannich reaction product of C₁-C₆₀ alkyl phenol, N-phenyl-p-phenylenediamine, and aldehyde such as formaldehyde (col.1, lines 53-59, col.2, line 20, and col.2, line 38-col.3, line 13).

While Farnag et al. fails to exemplify the presently claimed Mannich reaction product nor can the claimed Mannich reaction product be “clearly envisaged” from Farnag et al. as required to meet the standard of anticipation (cf. MPEP 2131.03), nevertheless, in light of the overlap between the claimed Mannich reaction product and the Mannich reaction product disclosed by Farnag et al., absent a showing of criticality for the presently claimed Mannich reaction product, it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use Mannich reaction product which is both disclosed by Farnag et al. and encompassed within the scope of the present claims and thereby arrive at the claimed invention.

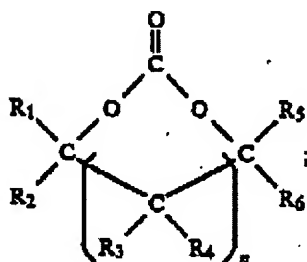
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10. Claims 1, 4, 8-10, 12-14, 17-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smrcka et al. (U.S. 5,370,805) in view of Wollenberg (U.S. 4,803,002).

Smrcka et al. disclose process for making calcium Mannich alkyl phenate which comprises forming a reaction mixture by combining (i) Mannich condensation product of alkyl phenol formed by reacting alkyl phenol, paraformaldehyde, and amine, (ii) lime, i.e. calcium oxide, and (iii) ethylene glycol, i.e. promoter. Once the reaction is complete, volatiles are removed to leave the reaction product (col.4, line 61-col.5, line 6 and col.5, lines 55-68).

The difference between Smrcka et al. and the present claimed invention is the requirement in the claims of alkylene carbonate.

Wollenberg discloses reacting alkylene carbonate of the formula:



where R_1 - R_6 are each independently selected from hydrogen or lower alkyl of 1 to 2 carbon atoms and wherein the alkylene carbonate includes ethylene carbonate with Mannich base such as that prepared by reacting alkyl phenol, formaldehyde, and amine in order to improve dispersant performance. Further, Wollenberg discloses reacting the alkylene carbonate with the Mannich base at temperature of 0-250 °C for four hours which overlaps the time and temperature utilized in the present invention (col.1, lines 36-42, col.1, line 68-col.2, line 4, col.2, lines 40-56, col.3, lines 18-28, col.5, lines 9-20, and example 7). Given that the combination of Smrcka et al.

with Wollenberg discloses process as presently claimed including reacting Mannich base with alkylene carbonate for time and temperature that overlaps that utilized in the present invention, it is clear that carbon dioxide and alkylene glycol would inherently form in situ to inherently form Group II metal carbonated overbased Mannich condensation product of alkyl phenol as presently claimed.

In light of the motivation for reacting alkylene carbonate with Mannich base disclosed by Wollenberg as presently claimed, it therefore would have been obvious to one of ordinary skill in the art to react alkylene carbonate with the product of Smrcka et al. in order to produce Group II metal carbonated overbased Mannich condensation product of alkyl phenol that has improved dispersant performance, and thereby arrive at the claimed invention.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rense (U.S. 3,372,118) disclose process that comprises mixing amine and lime, adding formaldehyde to form amine-formaldehyde and adding the amine-formaldehyde to mixture of alkyl phenol and Group II metal hydroxide.

Thompson et al. (U.S. 4,131,551) disclose process comprising reacting Mannich reaction product with calcium hydroxide.


Papay et al. (U.S. 5,652,201) disclose process comprising reacting alkyl phenol, ethylene glycol, metal oxide, and carbon dioxide, however, there is no disclosure of Mannich condensation product of alkyl phenol as presently claimed.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
6/21/06